

AMENDMENTS TO THE SPECIFICATION

On page 1, after the title, insert:

--CROSS REFERENCE TO RELATED APPLICATIONS

This application is a continuation of Application No. 09/426,581, filed October 25, 1999.--

Please replace the paragraph beginning at page 6, line 15, with the following amended paragraph:

According to this aspect, since one of the rate ranges ~~ranges~~ to which the average value belongs is judged and the quantization scale code is changed on the basis of this judgment result, it is possible to surely converge the encoding rate to the average value within the range corresponding to the predetermined average value by employing a relatively simple configuration.

Please replace the paragraph beginning at page 15, line 18, with the following amended paragraph:

Preferred embodiments of the present invention will be explained below with reference to the drawings. The following embodiments are the embodiments ~~embodiment~~ in which the present invention is applied to an encoding apparatus for compressing and encoding a dynamic image in accordance with an MPEG2 method among the above-mentioned MPEG methods.

Please replace the paragraph beginning at page 16, line 10, with the following amended paragraph:

As shown in FIG. 1B, the rate controller 9 is provided with a memory 9b and a CPU 9a serving as a judging device, a first judging device, a second judging device, a changing device, a first changing device and a second changing judging device.

Please replace the paragraph beginning at page 21, line 11, with the following amended paragraphs:

Next, a variable rate control according to the present invention is described with reference to FIGs. 3 to 10.

Please replace the paragraph beginning at page 23, line 18, with the following amended paragraph:

More specifically ~~actually~~, if a ratio of the encoding amounts in the respective pictures existing in one GOP 10 is presently assumed to be $I:P:B = R_i:R_p:R_b$, a following equation (1) is obtained.

Please replace the paragraph beginning at page 24, line 8, with the following amended paragraph:

After the $QS(\text{init})$ is obtained from the equation (1), 30 GOPs 10 included in the compression information signal Spd are obtained by the quantization and the encoding in which this $QS(\text{init})$ is used as a general rule. At this time, the CPU 9a generates the rate

signal Srr while storing into the memory 9b the encoding rates for the respective GOPs 10 independently of each other (~~refer~~ refer to FIG. 2).

Please replace the paragraph beginning at page 25, line 8, with the following amended paragraph:

On the other hand, if it is judged in the judgment at the step S5 that the processes are ended for all the pictures in one GOP 10 (Step S5; YES), it is judged whether or not a period (e.g., about 105 seconds) corresponding to 210 GOPs from the lead of the digital information signal Sd on which the first control for the QS is performed has elapsed (Step S6). If the period has elapsed (Step S6; YES), as the initial values of a maximum value and a minimum value of the QS in a later-described second control process (namely, a maximum value and a minimum value which are set in consideration with an image quality when the dynamic image information is decoded and the like), the maximum value is set to "9", and the minimum value is set to "3", respectively (Step S47). After that, the operational flow proceeds to the second control process. If the period has not ~~never~~ elapsed (Step S6; NO), it is judged whether or not a period (e.g., about 15 seconds) corresponding to 30 GOPs 10 has elapsed after the QS(init) is established at the step S2 (Step S7).

Please replace the paragraph beginning at page 25, line 24, with the following amended paragraph:

If the period has not ~~never~~ elapsed (Step S7; NO), the operational flow returns back to the step S3, so as to continue the process at the steps S3, and S4 until the elapse.

On the other hand, if it has elapsed (Step S7; YES), the encoding rates when the 30 GOPs 10 are generated until that time are read out from the memory 9b, and the average value of the encoding rates (namely, the average rate) is calculated. Then, it is judged whether or not this average value is greater than 4.2 Mbps (step S8).

Please replace the paragraph beginning at page 31, line 7, with the following amended paragraph:

More specifically ~~actually~~, when the picture is encoded by an encoding buffer memory (not shown) for transiently accumulating therein the digital information signal Sd at the time of the encoding and then it is accumulated in the encoding buffer memory, the dynamic image information is outputted from the decoding buffer memory at a corresponding timing, in response to the accumulated pictures at a time of decoding. Thus, an accumulation amount in the decoding buffer memory is reduced in response to the accumulated pictures at the corresponding timing.

Please replace the paragraph beginning at page 33, line 12, with the following amended paragraph:

The threshold targeted by the comparing process at the step S45 is defined as a value in which a value where the maximum capacity of the decoding buffer memory is assigned to the single slice in the above-mentioned picture is multiplied by the number of slices simulated to be currently accumulated in the decoding buffer memory. More specifically ~~actually~~, for example, if a dynamic image information corresponding to 10 slices is simulated to be currently accumulated in the decoding buffer memory, a value in

which a value where the maximum capacity of the decoding buffer memory is divided by "30" (i.e., the number of slices within the single picture) is multiplied by "10" is defined as a threshold at that time.